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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/980,713	12/05/2001	Toshiki Tanaka	Q67268	7137

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EXAMINER
MCCLOUD, RENATA D

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,713	TANAKA, TOSHIKI	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04/15/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. In response to the amendment filed 15 April 2003, paper number 6, the following has occurred:

(a) The objection to the drawings has been withdrawn by the examiner due to changes made by the applicant.

(b) The 35 U.S.C. 112 rejections have been withdrawn by the examiner due to the changes made by the applicant.

Drawings

2. The corrected or substitute drawings were received on 15 April 2003. These drawings are accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohzai et al (U.S. Patent 4,386,305).

Kohzai et al teach:

Claim 1: A numerical control drive system having two or more drive units, the numerical control drive comprising a servo drive unit for driving a motor (Fig. 1:23), a spindle drive unit, (e.g. Fig. 1:7) a numerical control unit for outputting a control command for driving the motor to said two or more drive units (e.g. Fig. 1:21), and a motor drive power converter for converting AC power supplied from an AC power supply into DC power and supplying the DC power to said two or more drive units (e.g. Fig. 1:5,6), wherein said motor drive power converter comprises means for finding an input current of the AC power supplied from the AC power supply (e.g. Fig. 1:10, 12; Col. 4:38-40), means for comparing the input current found by the input current detection means with an allowable current value with respect to at least one of a less-than, equal-to, and greater-than relation (e.g. Fig. 1:33; Col. 4:38-45), and means for inputting at least one of motor drive currents or motor speeds from said two or more drive units to which the DC power is supplied (e.g. Fig 1:39, 40; Col. 5:1-7), selecting the drive unit providing a large effect of lowering the input current (e.g. Col. 5:26-29), and outputting a control signal thereto if the input current determination means determines that the input current is greater than the allowable current value (e.g. Fig. 1:41; Col. 5:19-29), wherein said drive unit comprises control signal execution means for changing the control command from said numerical control unit based on the control signal output from the control signal output means (e.g. Col. 5: 36-51), and that the control signal execution

means of the drive unit inputting the control signal changes the control command from said numerical control unit, thereby lowering the input current (e.g. Col. 6:28-38) .

Claim 2: if the input current determination means determines that the input current is greater than the allowable current value, the control signal execution means performs processing of lessening the inclination of a speed command (e.g. Col. 5:15-29).

Claim 3: if the input current determination means determines that the input current is greater than the allowable current value, the control signal execution means shuts off gates of switching elements of said drive units (e.g. Col. 5:15-19).

Claim 4: if the input current determination means determines that the input current is greater than the allowable current value, the control signal execution means clamps a speed command (e.g. Col. 5:29-35).

Claim 5: if the input current determination means determines that the input current is greater than the allowable current value, the control signal execution means clamps a motor drive current (e.g. Col. 5:29-35).

Claim 8: the motor drive power converter comprises input current output means fro outputting the input the current found by the current detection means to the numerical control system (e.g. Fig. 1:32).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohzai et al as applied to claim 1 above, in view of Takaki et al (U.S. Patent 6,081,090).

Claim 7: Kohzai et al teach the limitations of claim 1. Referring to claim 7, they do not teach the motor drive power converter comprising means for retaining the cumulative sum of times the input current determination means has determined that the input current exceeds the allowable current value and alarm determination means for outputting an alarm to said drive units and said numerical control unit if the cumulative sum of times retained in the cumulative- sum-of -times retention means becomes equal to or greater than a reference value. Takaki et al teach a motor drive power converter comprising means for retaining the cumulative sum of times the input current determination means has determined that the input current exceeds the allowable current value, and alarm determination means for outputting an alarm to said drive units and a numerical control unit if the cumulative sum of times retained in the cumulative-sum-of -times retention means becomes equal to or greater than a reference value (e.g. Fig. 1, #13, #19, #20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the numerical control device taught by Kohzai et al to

utilize means for determining if the input current exceeds a value and means for outputting an alarm to said drive units and said numerical control unit if the sum of times retained in the cumulative- sum-of -times retention means becomes equal to or greater than a reference value as taught by Takaki et al. The advantage of this would be protection of the control apparatus from short-circuiting and overheating.

Response to Arguments

7. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Fujioka et al (U.S. Patent 04,641,069).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (703) 308-1763. The examiner can normally be reached on Mon.-Thurs and every other Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Renata McCloud
Examiner
Art Unit 2837

RDM
June 30, 2003